

DFCM Maintenance / Repair Training Program

in Conjunction with,
Salt Lake Community College
School of Technology
Division of Apprenticeship
Joe Mulvey, Director

*This document supercedes all previous documents.
Updated February 2006*

The following program is outlined in a four year program divided into two semesters per year. This Program is recognized by the Bureau of Apprenticeship and Training (BAT), a Federal Agency.

Conditions and Restrictions for Participation

Only permanent, full-time (Schedule B) employees who have been employed by DFCM for a minimum of six months are eligible to participate in this program. Testing or registration fees will not be covered by DFCM until after this probationary period. Employees in time-limited (Schedule AL or AJ) positions are not eligible.

At the completion of each course (semester) a certificate of completion may be given to each participant receiving a C grade or higher. Each participant who completes the four-year program will receive a certificate of completion for the entire maintenance/repair apprenticeship program.

Participants wishing to test out (CLEP) of a section in the apprenticeship program may do so. The participant will be given credit for competence in the related subject. There is a small fee associated with the test.

All participants will be eligible for administrative salary increases (ASI) upon completion of the required curriculum. An ASI is not available for testing out of a subject.

If an individual is not interested in participating in the structured training program, they will have the option to take any courses (JOB RELATED) and receive the ASI as prescribed for their job title, subject to supervisory approval. Requests for courses will be reviewed by the supervisor on a case by case basis and supervisory and management approval must be obtained prior to signing up for the course, using the DAS Education Assistance Contract. Supervisory and management positions may participate in training courses, but are not eligible to receive the associated ASI's.

For those participants interested in obtaining an associate of applied science degree from Salt Lake Community College, each semester course counts toward five (5) credit hours. After completion of the four year maintenance/repair program, students must meet the general education requirements for their chosen degree, (i.e. English, Science, etc.) At that time the degree will be awarded to the student.

Math Prerequisite

Individuals who wish to participate in the training program must prove competency in mathematics. Individuals who cannot produce a transcript showing a college math course of 099 or 0970 or higher, will be required to take a math competency exam at the institution of their choice. Individuals must pass the exam through Course Numbers 099 or 0970 which is **Pre-Algebra level, the required level to participate in the program.** If the SLCC is chosen, the cost for the necessary registration and one math test is \$35. This cost will be covered by DFCM. If retests are needed, they will be at the employee's expense.

Individuals who do not meet the math prerequisite must register for a math class and receive a passing grade before being accepted into the Apprenticeship Program. The required math class is 'FMTA 1470 Math for the Trades' if student is attending SLCC, or a comparable class at another institution. The cost for the class will be covered by DFCM.

Math Prerequisite (cont.)

Check with the 4130 office for the next available class schedule. Participants will need to produce transcripts or pass the math competency exam before this date in order to be admitted into the apprenticeship program for fall semester. 'FMTA 1470 Math for the Trades,' (spring class) will run January through May. The summer math class schedule will run May through August and the fall math class will run August through December.

Eligibility and Ratio of ASI's to Courses

The ASI to courses ratio is based on the employee's current wage level. An equity comparison on range position is done using a matrix, to determine the level for each employee. The breakdown will be as follows:

Level One and Level Two ranges are divided at mid-point. To clarify, Level One employees range from the entry salary level to the mid-point salary level. An employee is in the Level Two range once they have passed mid-point on the pay scale.

- AFTER COMPLETING ONE SEMESTER, OR 6 CREDIT HOURS OF STUDY, LEVEL ONE EMPLOYEES WILL RECEIVE ONE ASI.
- AFTER COMPLETING TWO SEMESTERS, OR 12 CREDIT HOURS OF STUDY, LEVEL TWO EMPLOYEES WILL RECEIVE ONE ASI.
- 6 CREDIT HOURS IS APPROXIMATELY EQUIVALENT TO 81 SEAT HOURS.

There will be certain restrictions, such as only two courses per year can be claimed to be part of the program, and there will be a cap on ASI's after an employee receives eight. Additionally, only craft level positions are eligible.

- A MAXIMUM OF TWO ASI INCREASES CAN BE ACHIEVED PER YEAR, PER EMPLOYEE. A YEAR IS DEFINED AS A CALENDAR YEAR, BEGINNING IN JANUARY AND ENDING IN DECEMBER.
- STARTING IN DECEMBER 2002, A TECHNICAL REVIEW COMMITTEE WILL BE ESTABLISHED. UPON THE COMPLETION OF A COURSE AND A PASSING GRADE, THE TECHNICAL REVIEW COMMITTEE WILL INTERVIEW THE EMPLOYEE AND OBSERVE A HANDS-ON EXERCISE. THE RESULTS OF THE COMMITTEE'S REVIEW WILL BE SUBMITTED IN CONSIDERATION FOR THE ASI TO BE GRANTED.

Participants who may be on longevity who are not eligible for an ASI will receive a one time bonus or incentive. The amount of the incentive will be relative to an equivalent ASI as a one time payment, not to exceed \$500. The longevity incentive will be prescribed under the same requirements as indicated above.

An Administrative Salary Increase (ASI) is defined as one step on the state pay scale equivalent to 2.75%.

There is no guarantee given or implied that a position an employee may be attaining to will be available when the course of study is complete. If such a position becomes available, the employee is welcome to apply, but there are no guarantees.

Facilities Maintenance Technician Apprenticeship Courses

PREREQUISITES:

FMTA 1470 (Math for the Trades) 5 credit hours

Or equivalent college math or placement into Math 1010 by CPT exam.

COURSE DESCRIPTION: Customized course in applied mathematics starting with whole numbers, formulas, fractions, decimals, algebra, geometry, and trigonometric functions.

CORE COURSES:

Semester 1

FMTA Electricity 1110 (Maintenance Electricity 1) 5 credit hours

Prerequisite: FMTA 1470 or prove math competence for placement into Math 1010.

COURSE DESCRIPTION: Basic AC/DC electricity course discussing terminology, circuits, testing equipment, trouble shooting, outlets, three-way switching, single pole switching, repair and replacement, splicing wires, working knowledge of code, lighting, and electrical safety rules and procedures including lock-out tag-out. First Aid/CPR must be completed in this course.

Semester 2

FMTA Electricity 1120 (Maintenance Electricity 2) 5 credit hours

Prerequisite: FMTA 1110

COURSE DESCRIPTION: Continued training in industrial motor control principles and electrical magnetic controls. Ladder diagramming and relay logic, reduced voltage starting, braking and speed control. Symbols, design strategies, NEC Codes, instrumentation, distribution and various control systems.

Semester 3

FMTA 1210 (Maintenance HVAC) 5 credit hours

Prerequisite: FMTA 1120

COURSE DESCRIPTION: Includes safety, basic HVAC principles and practices, EPA refrigerant evacuation/reclamation certification, basic refrigeration, basic heating, troubleshooting, tools, and equipment. Course work for RMGA Certification will be presented with testing optional.

Facilities Maintenance Technician Apprenticeship Courses (Cont.)

Semester 4

FMTA 1220 (Maintenance Plumbing) 5 credit hours

Prerequisite: FMTA 1470 or competence for placement into Math 1010, FMTA 1210 or approval of program sponsor.

COURSE DESCRIPTION: Basic plumbing discussing terminology, water piping, sewer systems, drains and drain cleaning, venting, code applications, soldering, brazing, gluing, fixtures, repair and replacement, safety principles and procedures. Backflow prevention and 10-hour safety course to be complete in this semester. Certification in Backflow Prevention and OSHA 10 are both optional at the end of the semester.

Semester 5

FMTA 2310 (Maintenance Construction/Mechanic) 5 credit hours

Prerequisite: FMTA 1470 or proof of math competence entering into Math 1010 and program sponsor approval.

COURSE DESCRIPTION: Course material includes safety standards, framing, sheetrock repair and installation, blueprint and layout, measurements, materials and hardware. Painting, wall partition construction and equipment operation. Mechanical gear and alignment, hydraulics, basic system repairs and maintenance.

Semester 6

FMTA 2320 (Maintenance Pipefitting) 5 credit hours

Prerequisite: Approval of program sponsor

COURSE DESCRIPTION: This course will include piping diagrams, pipefitting, pumps, bearings and bushings, air compressors with all applicable principles and practices. Valves including repair and maintenance. Basic hydraulics and fluid controls will be presented with applications and proper procedures. Basic welding including safety, oxyacetylene cutting, welding, and basic shielded metal arc welding.

ELECTIVES:

Semester 7

FMTA 2410 (Maintenance Welding and/or Trowel Trades) 5 credit hours

Prerequisite: FMTA 1470 or proof of math competence entering into Math 1010 and program sponsor approval.

COURSE DESCRIPTION: First half of course material includes safety standards, welding basics and fundamentals including oxyacetylene cutting, welding, shielded metal arc welding, and grinding. Second half of course includes basic safety, use and care of tools and equipment in the trowel trades. This includes floor wall, ceiling tile, cement and brick masonry installation and repair.

Grounds Maintenance Technician Apprenticeship Courses

PREREQUISITES:

FMTA 1470 (Math for the Trades) 5 credit hours

Or equivalent college math or placement into Math 1010 by CPT exam.

COURSE DESCRIPTION: Customized course in applied mathematics starting with whole numbers, formulas, fractions, decimals, algebra, geometry, and trigonometric functions.

CORE COURSES:

LAND 1110 (Plumbing/Pipefitting Application). 5 credit hours

COURSE DESCRIPTION: This introductory course will put emphasis on drawing and sketching in relation to architectural drawings, isometric single-line pipe sketching, dimensioning, and working drawings.

LAND 1120 (Landscape Water Conservation and Electrical). 5 credit hours

Prerequisite: LAND 1110.

COURSE DESCRIPTION: This course introduces electrical theory for AC, DC, and low voltage applications. Electrical safety is strongly emphasized. Water conservancy through proper usage and variety of landscape practices.

LAND 1210 (Small Engine Repair/Maintenance) 5 credit hours

Prerequisite: LAND 1120.

COURSE DESCRIPTION: Designed to introduce apprentices to internal combustion, 2 and 4-cycle small engine theory and practical application. Preventative maintenance, fuel mixtures, repair and service are all introduced.

LAND 1220 (Pest Management/Sustainable Landscapes) 5 credit hours

Prerequisite: LAND 1210.

COURSE DESCRIPTION: Controlling pests through proper management practices & application of pesticides. Various landscapes & typical control methods for preventing destruction by pests. Proper personal protection when making these control applications.

LAND 2310 (Fundamentals of Soil Science & Horticulture) 5 credit hours

Prerequisite: LAND 1220.

COURSE DESCRIPTION: Designing and sustaining soils for a variety of plant proliferation. Desirable plants for varying soil conditions and watering practices. Application of fertilizers, how much, when, and for what vegetation.

Grounds Maintenance Technician Apprenticeship Courses(Cont.)

LAND 2320 (Woody Plant Materials and Turfgrass Management) 5 credit hours

Prerequisite: LAND 2310.

COURSE DESCRIPTION: Theory, application of woody plant materials, management of various applications, and consistent practices for control and management of plants and materials. Maintenance and care of turfgrass through proper fertilization and care.

LAND 2410 (Arbor Culture) 5 credit hours

Prerequisite: LAND 2320.

COURSE DESCRIPTION: Cultivation of tree and wooded plant growth through proper soil conditions, water management and training practices.

LAND 2420 (Annual/Perennial. Plant Materials) 5 credit hours

Prerequisite: LAND 2410.

COURSE DESCRIPTION: Good landscaping practices through the utilization of annual and perennial plants with added available color variety and sustaining growth habitats.

**DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
MAINTENANCE/REPAIR TRAINING PROGRAM
EDUCATIONAL ASSISTANCE CONTRACT**

The Division of Facilities Construction and Management (DFCM) agrees to pay **in advance** all covered tuition and book fees for the undersigned employee.

Participation in DFCM's Maintenance/Repair Training program is voluntary and is not a condition of employment. Only full-time employees who have been employed by the State of Utah for a minimum of six months are eligible to participate in this program. Testing or registration fees will not be covered by DFCM until after this probationary period. Employees in time-limited positions are not eligible to participate.

This contract covers the following courses:

Course Title	School	Semester	Cost of Tuition & Books

By entering into this contract, the undersigned employee agrees to the following:

- 1) Complete the course with a grade of "C" or above or in the case of a pass-fail class, the achievement of a passing grade.
- 2) Reimburse the state for the entire cost of tuition and books if the course is not completed with a passing grade.
- 3) Reimburse tuition and book fees within 90 days of failure to pass/complete the course. Failure to reimburse these fees within 90 days will result in collection proceedings.
- 4) Remain in the employ of DFCM for at least 12 months following the completion of the above course(s) or refund the full amount contributed by the state. Failure to reimburse the state for these costs at the time of termination will result in collection proceedings.

By signing below, the supervisor and employee agree to abide by the terms of this document and the parameters of DFCM's Maintenance/Repair Training Program.

_____	_____
Employee	Date

_____	_____
Supervisor	Date

_____	_____
Managing Facilities Coordinator	Date

Participating Institutions

NOTE: NOT ALL THESE INSTITUTIONS PARTICIPATE ALL THE TIME. THE DFCM COORDINATOR CAN VERIFY PARTICIPATION BEFORE ATTEMPTING TO ENROLL IN THIS PROGRAM.

<u>Institution</u>	<u>Contact:</u>	<u>Institution</u>	<u>Contact</u>
Ogden Weber ATC 559 East AVC Lane Ogden UT 84404 Phone (801) 627-8448	Curtis Neilson	CEU Price	Miles Nelson
Bridgerland ATC 1301 N. 600 W. Logan, UT 84321 Phone (435)-750-3071	Curtis Dent	Blanding	Calvin Hunt
Davis ATC 550 E. 300 S. Kaysville UT 84037 Phone (801)-593-2362	Chris Soelburg	Dixie College 225 S. 700 E. St. George, UT 84770 Phone (435)-673-4811 ext. 7856	Bob Cobb Richard Van Ausdel
Salt Lake Community College 4600 South Redwood RD. PO BOX 30808 SLC, UT 84130-0808 Phone 801-957-4066	Joe Mulvey		
Utah Valley State College 1200 S. 800 W. Orem, UT 84058 Phone (801)-222-8744	Joel Bradford		
Sevier Valley ATC 200 S. 800 W. Richfield UT 84701 Phone (801)-896-8202 ext. 214	Noel Bailey		
Southern Utah University 351 W. Center Street Cedar City, UT 84720 Phone (435)-586-7700	Danny Shakespeare		